

REMARKS/ARGUMENTS

Claims 1-6 remain pending in the present application. Claims 1-6 stand rejected under 35 U.S.C. §112 as lacking support in the written description set forth in the present specification. No prior art rejections under 35 U.S.C. §§102 or 103 have been asserted against the pending claims.

Amendments to the Specification

The first amendment to the specification submitted herein inserts the number of the U.S. patent that resulted from the application, Serial No. 09/521,744, from which the present application claimed continuation status and priority benefits. The other amendments to the specification submitted herewith are intended to correct certain sentences containing typographical errors that appeared in the specification as filed, but whose intended meaning would have been readily discernable nonetheless. In this regard, the amendments to paragraphs [0054] and [0086] replace the notation ".sup.2" with the equivalent superscript --2--, as in "d.sup.2 /D" has been replaced by --d²/D--. The amendment to paragraph [0055] is intended to correct another readily discernable typographical error, in which the variable "R" was mentioned instead of the correct term --flux--, as discussed in more detail below with respect to the rejection under 35 U.S.C. §112.

Lack of Written Description Rejection of Claims 1-6 under 35 U.S.C. §112

In the December 4, 2003 Office Action, claims 1-6 were rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. In this regard, the Office Action stated that independent claims 1 and

4 do not reasonably have support in that the specification discloses that the diffusion ratio R for a water molecule in the supply stream chamber is between 0.75 to 3, and although the specification indicates that, for R values above 3, the flux may increase as shown in FIG. 8, there is inadequate support to show that the flux may not increase more at values of around 10.

Applicants submit that the lack of written description rejection should be withdrawn because the present specification fully supports the limitations recited in claims 1 and 4, as well as their dependent claims 2, 3, 5 and 6. The present specification more than establishes that applicants' claimed method is fully operable in within the range shown in FIG. 8. For instance, Example 1 describes a fully operable fuel cell that has an acceptable normalized flux through the membrane in the combined heat and humidity exchanger (CHHE), where R was 0.76 and 0.84, respectively. FIG. 8 further shows that acceptable normalized fluxes are obtainable for R values between about 0.75 and 2.5. The limitation of "greater than about 0.75" for R in claims 1 and 4 is based upon a reasoned extrapolation of the successful results established in FIG. 8, including where $R = 2.5$. The theoretical principles, set forth at page 23, lines 1-17 of the applicants' specification, then establish that the flux "can be expected to increase somewhat above values of 1."

A typographical error appears in the paragraph at page 22, line 22 - page 23, line 27, from which the above quotation was taken. In this regard, it is the *flux*, and *not* the value of R itself, that can be expected to increase when the value of R is above 1. Applicants submit that persons skilled in the technology involved here would readily discern the correct meaning of the sentence, despite the

typographical error, particularly in view of the reference to flux in each of the sentences that precede the sentence containing the typographical error:

To obtain the greatest *flux* of water through the membrane in certain CHHEs, the ratio R for the flows in the chambers was preferably found to be between about 0.75 and 3. The water *flux* drops off sharply for R values below this range. Above this range, the observed *flux* may increase but only slightly. Note that in FIG. 8 following, the observed *flux* appears to decrease slightly for R values greater than 1 over the measured range. Generally however, R can be expected to increase somewhat above values of 1.

(Emphasis added). For this reason, applicants have submitted herewith an amendment to paragraph [0055], in which the variable "R" mentioned in the last sentence quoted just above, is replaced with the correct term --flux--, so that the sentence now reads:

Generally however, *the flux* can be expected to increase somewhat above *R* values of 1.

Regardless of whether the flux increases substantially, insubstantially, or not at all, the flux would nevertheless remain acceptable, and the applicants' written description therefore supports the limitation recited in claims 1 and 4, in which the values of R are generally greater than 0.75. (Note, however, that higher R values, although not preferred, are viable nonetheless, for the reasons set forth in the applicants' specification at page 23, lines 5-17.)

Applicants suspect that the basis of the written description rejection in the Office Action was the concern that the flux might decrease substantially around

10. Such a flux decrease would be contradicted by the theoretical principles set forth in the applicants' specification and the expectations of persons skilled in the technology involved here, who would instead predict, based upon a fair reading of the applicants' specification, that the flux generally increases with R. Moreover, the parent application from which the present application claimed continuation status and priority benefits, Serial No. 09/521,744 (now U.S. Patent No. 6,416,895), contains claims that were allowed with the very same --greater than about 0.75-- limitation for R that is now the basis of the inadequate written description rejection in the present application.

Applicants therefore submit that claims 1 and 4 are fully supported in the applicants' specification, and that the lack of written description rejection as to those claims should be withdrawn.

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In view of the foregoing remarks, applicants submit that claims 1-6 are allowable. The Examiner is invited to telephone the applicants' undersigned attorney at (312) 775-8123 if any unresolved matters remain.

Please charge any fees incurred in connection with this submission to Deposit Account No. 13-0017.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Robert W. Fieseler", is written over a horizontal line.

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